

It has been shown that the

1 2. ² A method for making a thin film semi-conductor comprising
2 the steps of:

3 providing a semi-conductor substrate having a surface;
4 anodizing the semi-conductor substrate at a first current density to
5 provide a first porous layer adjacent the surface having a first porosity;
6 anodizing the semi-conductor substrate at a second current density
7 higher than said first current density to provide a second porous layer adjacent the
8 first porous layer opposite the surface, the second porous layer having a second
9 porosity greater than the first porosity;
10 anodizing the semi-conductor substrate at a third current density higher
11 than said second current density to provide a third porous layer in or adjacent the
12 second porous layer, the third porous layer having a third porosity higher than said
13 second porosity;
14 forming at least one semi-conductor film on the surface and first
15 porous layer; and
16 separating the semi-conductor film from the semi-conductor substrate
17 along a line of relative weakness defined in the third porous layer or at or adjacent an
interface defined between said third porous layer and the second porous layer.

1 3. ³ A method as defined in Claim 2, wherein in said anodizing
2 steps, the semi-conductor substrate is contacted by an electrolytic solution and
3 exposed to a flow of current at said first, second and third current density,
respectively.

1 4. ⁴ A method as defined in Claim 3, wherein the electrolytic
solution comprises hydrogen fluoride and a hydrocarbon alcohol.

1 5. A method as defined in Claim 3, wherein in the anodizing
steps, the electrolytic solution is the same.

1 6. A method as defined in Claim 3, wherein the electrolytic
solution used in the anodizing steps varies.

1 16. A method as defined in Claim 13, wherein the support substrate
is attached to the semi-conductor film by adhesive bonding.

1 17. A method for making a solar cell comprising the steps of:
2 providing a semi-conductor substrate having a surface;
3 forming a porous structure adjacent the surface of the substrate
4 including a first porous layer adjacent the surface having a first porosity, a second
5 porous layer adjacent the first porous layer opposite the surface having a second
6 porosity greater than said first porosity and a third porous layer in or adjacent to the
7 second porous layer having a third porosity greater than said second porosity;
8 forming an epitaxially grown thin film semi-conductor structure on the
9 surface including at least one hetero junction;
10 forming a SiO₂ insulating layer on an exposed surface of the thin film
11 semi-conductor structure;
12 patterning and etching the insulating layer to define holes;
13 depositing a metal film on the insulating layer to form a metal film
14 layer;
15 patterning and etching the metal film layer to form electrodes disposed
16 in the holes;
17 attaching elongate conductors having at least one extending end
18 portion to the electrodes;
19 attaching a support substrate to the surface overlying the electrodes and
20 conductors with a binder material; and
21 thereafter, separating the thin film semi-conductor structure and
22 support substrate from the semi-conductor substrate along a line of relative weakness
23 defined in the third porous layer or at or adjacent an interface defined between said
third porous layer and the second porous layer.

1 18. A method for making a solar cell as defined in Claim 17,
2 wherein the epitaxially grown thin film semi-conductor structure comprises a p⁺/p⁻/n⁺
thin film semi-conductor structure.

1 19. A method for making a solar cell as defined in Claim 17 further
2 comprising the step of applying a metal electrode to a surface of the separated thin
film semi-conductor structure opposite the support substrate.

1 22. A method for making a solar cell as defined in Claim 17,
 wherein the support substrate and binder are transparent.

Year	Age	Sex	Weight (kg)	Height (cm)	Body Mass Index (kg/m ²)	Waist Circumference (cm)	Hip Circumference (cm)	Waist-Hip Ratio	Body Fat (%)	Visceral Fat (cm)	Subcutaneous Fat (cm)	Visceral Fat Index (cm ³ /m ²)	Subcutaneous Fat Index (cm ³ /m ²)	Visceral Fat to Subcutaneous Fat Ratio
1990	20	M	65.0	175.0	21.1	85.0	100.0	0.85	15.0	1.0	1.5	1.0	1.5	0.67
1991	21	M	68.0	178.0	21.4	88.0	102.0	0.86	16.0	1.1	1.6	1.1	1.6	0.69
1992	22	M	70.0	180.0	21.9	90.0	104.0	0.87	17.0	1.2	1.7	1.2	1.7	0.71
1993	23	M	72.0	182.0	22.2	92.0	106.0	0.88	18.0	1.3	1.8	1.3	1.8	0.72
1994	24	M	75.0	185.0	22.5	95.0	108.0	0.89	19.0	1.4	1.9	1.4	1.9	0.74
1995	25	M	78.0	188.0	22.8	98.0	110.0	0.90	20.0	1.5	2.0	1.5	2.0	0.75
1996	26	M	80.0	190.0	23.0	100.0	112.0	0.91	21.0	1.6	2.1	1.6	2.1	0.76
1997	27	M	82.0	192.0	23.2	102.0	114.0	0.92	22.0	1.7	2.2	1.7	2.2	0.77
1998	28	M	85.0	195.0	23.5	105.0	116.0	0.93	23.0	1.8	2.3	1.8	2.3	0.78
1999	29	M	88.0	198.0	23.8	108.0	118.0	0.94	24.0	1.9	2.4	1.9	2.4	0.79
2000	30	M	90.0	200.0	24.0	110.0	120.0	0.95	25.0	2.0	2.5	2.0	2.5	0.80
2001	31	M	92.0	202.0	24.2	112.0	122.0	0.96	26.0	2.1	2.6	2.1	2.6	0.81
2002	32	M	95.0	205.0	24.5	115.0	124.0	0.97	27.0	2.2	2.7	2.2	2.7	0.82
2003	33	M	98.0	208.0	24.8	118.0	126.0	0.98	28.0	2.3	2.8	2.3	2.8	0.83
2004	34	M	100.0	210.0	25.0	120.0	128.0	0.99	29.0	2.4	2.9	2.4	2.9	0.84
2005	35	M	102.0	212.0	25.2	122.0	130.0	1.00	30.0	2.5	3.0	2.5	3.0	0.85
2006	36	M	105.0	215.0	25.5	125.0	132.0	1.01	31.0	2.6	3.1	2.6	3.1	0.86
2007	37	M	108.0	218.0	25.8	128.0	134.0	1.02	32.0	2.7	3.2	2.7	3.2	0.87
2008	38	M	110.0	220.0	26.0	130.0	136.0	1.03	33.0	2.8	3.3	2.8	3.3	0.88
2009	39	M	112.0	222.0	26.2	132.0	138.0	1.04	34.0	2.9	3.4	2.9	3.4	0.89
2010	40	M	115.0	225.0	26.5	135.0	140.0	1.05	35.0	3.0	3.5	3.0	3.5	0.90
2011	41	M	118.0	228.0	26.8	138.0	142.0	1.06	36.0	3.1	3.6	3.1	3.6	0.91
2012	42	M	120.0	230.0	27.0	140.0	144.0	1.07	37.0	3.2	3.7	3.2	3.7	0.92
2013	43	M	122.0	232.0	27.2	142.0	146.0	1.08	38.0	3.3	3.8	3.3	3.8	0.93
2014	44	M	125.0	235.0	27.5	145.0	148.0	1.09	39.0	3.4	3.9	3.4	3.9	0.94
2015	45	M	128.0	238.0	27.8	148.0	150.0	1.10	40.0	3.5	4.0			

23. A method for making a light emitting diode, comprising the steps of:

- providing a single crystal semi-conductor substrate doped with a first type of impurity having a surface;
- introducing a second type of impurity into said surface to define a surface layer doped with a second type of impurity adjacent the surface
- anodizing the surface layer to define a first porous layer having a first porosity along a surface of the surface layer;
- anodizing the substrate to form a second porous layer adjacent the first porosity layer and traversing the surface layer, and having a second porosity less than said first porosity;
- anodizing the substrate to form a third porous layer in the second porous layer, the third porous layer having a third porosity greater than the second porosity;
- providing a plurality of parallel spaced electrodes on said first porous layer;
- attaching a transparent support substrate to the surface and electrodes with a transparent binder material;
- separating the second porous layer from the semi-conductor substrate along a line of weakness defined in the third porous layer or at or adjacent and interface defined between said second porous layer and the third porous layer to form a separated LED substrate;
- providing a like second plurality of parallel spaced electrodes on an exposed surface of said second porous layer opposite the surface layer;
- attaching a second transparent support substrate to the exposed surface and electrodes with a transparent binder material to form an LED assembly; and
- thereafter, subdividing the LED assembly between the spaced electrodes to define a plurality of LED devices.

- 1 24. A method as defined in Claim 23, wherein the semi-conductor
substrate comprises a p-type impurity.
- 1 25. A method as defined in Claim 24, wherein the surface layer
comprises an n-type impurity.

add B'
add C'

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